

What is claimed is:

1. A measuring device for monitoring a material and determining a parameter that is related to the dielectric properties of the material, comprising a product area for receiving the product, a first microwave resonator from which, in operation, microwaves can enter the product area, and a compensation device for compensating for environmental influences, the compensation device comprising a second microwave resonator which is shielded from the product area in respect of microwave radiation.
2. A measuring device according to claim 1, in which the compensation device is arranged to compensate for temperature variation.
3. A measuring device according to claim 1, which is arranged to determine the density of the product.
4. A measuring device according to claim 1, in which the product area is a channel for receiving a travelling strand of fibrous material.
5. A measuring device according to claim 1, in which the first resonator and the second resonator are of substantially the same construction.
6. A measuring device according to claim 1, in which the first resonator and the second resonator are at least partly filled with a dielectric.
7. A measuring device according to claim 1, in which the first resonator and the second resonator are arranged adjacent to each other, and separated by a space.
8. A measuring device according to claim 1, in which

the first resonator and the second resonator form a modular unit.

9. A measuring device according to claim 1, in which,
5 in operation, the product runs through the first resonator.

10. A measuring device according to claim 1, in which
10 the first resonator and/or the second resonator are each a substantially completely shielded cavity resonator with an opening for the admission of the product.

11. A fibrous material processing machine having at least one fibre processing element and further
15 comprising a measuring device for monitoring a material, the measurement device having a first microwave resonator and a compensating device for compensating for environmental influences on said first microwave resonator, said compensating device comprising a second
20 microwave resonator, said measuring device being positioned at a measuring location and a said processing element of said machine being adjustable in dependence on measurement values obtained at said measurement location.

25
12. A machine according to claim 11, which is for processing textile fibre material, and in which said measuring device is arranged to monitor the density of a textile fibre sliver and a said processing element is
30 adjustable for influencing properties of the sliver.

13. A machine according to claim 11, the machine being a carding machine, and the measurement device being arranged near a delivery outlet of the carding machine.

35
14. A machine according to claim 11, which is a draw frame, a said measurement device being arranged near a delivery outlet of the draw frame.

15. A machine according to claim 11, which is a draw frame, said draw frame comprising a first said measurement device in an inlet region and a second said measurement device in an outlet region.

5

16. A machine according to claim 15, comprising a machine control and regulation device to which each measurement device is connected.

10 17. A machine according to claim 16, further comprising an actuation device for a said processing element, the actuation device being controllable by the control and regulation device in dependence on measurement data received from the first measurement device and/or
15 measurement data received from the second measurement device.

18. A method of controlling the density of fibre material in a textile processing machine, comprising
20 monitoring the fibre material at a measuring location using a device comprising a first resonator and a compensation device comprising a second resonator, and adjusting the condition of a processing step in said machine in dependence on measured values obtained by the
25 measuring device.